CALIFORNIA NATIVE PLANT SOCIETY

April 19, 2013

To: Dave Harlow, DRECP Director
Karen Douglas, CEC Commissioner

From: CNPS

RE: **Integrating Findings and Conditions of Certification from CEC Application for Certification (AFC) projects into the DRECP**

Dear Dave and Karen,
As discussed in a recent phone conversation, CNPS is glad to provide information gathered from several approved energy projects, and from one currently under review, that we believe would benefit the conservation actions being developed for the DRECP. We would like to make the REAT technical team aware of this information in case they are not already, and recommend that they incorporate these concepts and requirements into DRECP BGOs and DFA streamlining measures.

This information comes directly from CEC Presiding Members Final Decision (PMFD) reports for approved projects (all COC references), and from CEC Final Staff Assessment (FSA) report findings for a project in review but suspended (Hidden Hills SEGS). In some places, we have inserted clarifying wording in [brackets].

We believe that incorporating these findings and conditions into the DRECP will improve the Plan's overall chances of conserving target species, communities, and ecological processes. Because desert renewable energy project approvals outside of the DRECP are meant to be consistent with the goals and objectives of the DRECP, these findings and conditions are appropriate for inclusion into the final Plan.

We reference below the source document locations where these plant-related conditions and findings appear. For example, Genesis BIO19(C)(3) refers to the Biological Condition of Certification #BIO19, section C3, which appears in the PMFD report for the Genesis solar energy project. All project PMFDs and FSAs are available online via the CEC website.

I. Special-status plant COCs that integrate with DRECP species-specific plant BGOs and/or DFA streamlining measures.

<u>1. Importance of locally significant populations</u>
Language requiring consideration of, and placing a conservation premium on, regionally or locally significant plant populations appears in several approved project PMFDs.

see:
Genesis BIO 19(C)(3)
Blythe BIO 19(C)(3)
Calico BIO 12(C)
IVS BIO 19(C)(3)
Palen BIO 19(C)(3)

> Mitigation for CNDDB Rank 3 Plants [plants with State rarity rank of S3] – No On-Site Avoidance Required Unless Local or Regional Significance: If species with a CNDDB [State] rank of S3 are detected within the Project Disturbance Area, no onsite avoidance or compensatory mitigation shall be required *unless the occurrence has local or regional significance*, in which case the plant occurrence shall be treated as a CNDDB [State] rank S2 plant species [avoidance or 2:1 mitigation]. *A plant occurrence would be considered to have local or regional significance if:*
> *a. It occurs at the outermost periphery of its range in California;*
> *b. It occurs in an atypical habitat, region, or elevation for the taxon that suggests that the occurrence may have genetic significance (e.g., that may increase its ability to survive future threats), or;*
> *c. It exhibits any unusual morphology that is not clearly attributable to environmental factors that may indicate a potential new variety or sub-species.* Emphasis added.

We mean to focus attention on the language in this COC that emphasizes the concept of *local or regional significance*. Including this concept in DRECP BGOs and/or DFA streamlining requirements will help to conserve vulnerable plant populations by identifying biogeographically strategic, locally significant segments of the population and holding them to a higher protection standard than less imperiled occurrences.

2. Importance of designing plant monitoring data collection protocols to maximize scientific analysis and discovery

Approved projects are required to collect germplasm (seeds, propogules) and/or monitor plant conditions for special status plants.

see:
Genesis BIO 19(C)(5)
Blythe BIO 19(C)(5)
Calico BIO 12(C)
Ivanpah BIO 18(5-7)
IVS BIO 19(C)(5)
Palen BIO 19(A)(2)(g), BIO 19(B)(4), BIO 19(D)(III)(1).

Additionally, during the course of project construction, some projects are required to salvage and transplant plants addressed under BLM or County plant policies, or revegetate areas subject to construction related impacts, and to monitor post-salvage / transplanting / revegetation conditions for at least five years. These monitoring data need to be make readily available to the public and the scientific community.

see:
Calico BIO 12(E) - Compliance Reports: annually for five years
Calico BIO 10(4) - Revegetation Report: annually for ten years
Calico BIO 12(Verification) - Monitoring Reports: annually for life of project
Ivanpah BIO 18(8) - ten years
Rice BIO12(B) - five years

The data collected during these required activities would greatly improve scientific efforts to establish a more complete life history datatset, and conduct population viability analyses if

protocols for quantitative data collection were defined, standardized, and implemented. Examples of more useful data include:

- documenting the number of emerged plants observed, along with the date observed,
- taking annual growth measurements of individual monitored plants that include length, width, and height data for the same (perennial) plants over multiple years,
- defining and implementing a standardized protocol for quantifying fruit and seed production per plant.
- making monitoring protocol and data on individual plants readily publically available within a short time frame (i.e. within 3 months of collecting the data).

Many of these data are already collected as part of standard monitoring, but are publically available only in summary form that is not scientifically useful and/or lacking in sampling protocol. While keeping a field monitor's tasks practicable, very minor additional effort would be required to include each of these metrics, outline field methods clearly, and present all data in tabular form. However, these small changes would greatly improve the usefulness of the data for scientists studying and modeling desert rare plants. We further recommend that REAT technical staff consult with desert plant researchers (e.g., CEC PIER-funded research scientists) to develop more effective data collection protocols.

Making the collected data available and easily accessible to the research community and the public at large, is as important an improvement as enhanced protocols. An important part of this is mandating that data is presented on individual plants rather than as summary statistics such as percent survival, mean size etc. Individual level data can be used by other researchers to make site comparisons, track differences between affected and unaffected plants, generate effecitve management measures and track regional trends for multiple species. Together, defined, revised protocols and wider data availability would greatly improve scientific analyses of impacted plant populations, and thereby better inform both conservation and development actions over the term of the Plan.

II. Plant Community COCs and FSA findings that integrate with DRECP Landscape-level and Natural Community BGOs

1. Importance of vegetation mapping using CDFW VegCAMP protocols

The state standard for vegetation mapping is provided by the CDFW VegCAMP protocol. DRECP agencies have already spent significant resources developing new maps, and cross-walking old ones that follow the National Vegetation Classification System (NVCS) standards. The most complete description of California vegetation mapped according to the NVCS standards are catalogued in *A Manual of California Vegetation, 2nd Ed.* It has become standard practice to require project applicants to generate site-specific vegetation maps following these standards, though the *Best Management Practices and Guidance Manual* (REAT 2010) does not specifically call out a recommendation to do so.

see:
Palen BIO 23(10)
Calico BIO 26(A)

Project-level vegetation mapping, when required, should be done according to the State (VegCAMP) standards.

2. COCs important to the development of DRECP Natural Community BGOs for targeted plant communities.

Several Biological COCs relate to specific plant communities and provide important examples of concepts that could be usefully incorporated into conservation actions being developed for rare and locally important plant communities as part of DRECP Natural Community BGOs.

see:

i. Palen BIO 23 and BIO 24, and *proposed* Hidden Hills BIO 23 (from HHSEGS FSA, Chpt. 4 pp. 4.2-276 to 281): protocols for determining whether project groundwater use is effecting groundwater-dependent plant communities. Importance of monitoring and establishing remedial actions for groundwater-dependent plant communities.

ii. Abengoa BIO 20: Conservation of desert marsh community. This COC establishes requirement for project owner to maintain marsh hydrology, or component thereof, until alternate water source is established.

iii. Beacon BIO 18: Construct and vegetate multifunctional channel to mimic hydrogeomorphic and ecological functions of washes to be altered by project.

iv. Blythe BIO 22(1), Palen BIO21(1): 3:1 mitigation ratio for desert dry wash woodland communities affected by project.

v. Calico BIO 26(A): Requires mitigation lands acquired as compensation for impacts to jurisdictional waters of the state to contain the same vegetation communities as impacted washes.

vi. Palen BIO 21(5,6): Requires that wash (stream) crossings minimize impacts where topography allows, and that runoff diffuser designs maintain pre-project flow patterns in all washes downstream of project, regardless of natural surface drainage patterns (wash complexity).

vii. Findings in CEC staff's FSA for Hidden Hills SEGS that provide referenced descriptions of plant community / wildlife habitat relationships (see See HHSEGS FSA Chpt 4 Biological Resources, pp. 4.2-44 to 53 for groundwater-dependent plant community / habitat information), and additional management actions that could potentially improve BGOs for wash and/or groundwater-dependent communities (see 2(i), above).

Below we quote an extended excerpt from the Hidden Hills SEGS FSA (Chpt. 4.2 pp. 4.2-185 to 189) that articulates well the ecological values of desert wash plant communities. Though written for one project, the information and observations are translatable to all projects affecting desert washes. This information can help inform the development of DRECP BGOs for desert wash natural communities. Again, in some places we have added text in [brackets] for clarity. All citations referenced can be found in the HHSEGS FSA Chapter 4 bibliography.

> ***Importance of Ephemeral Desert Washes to Wildlife***
>
> The importance of ephemeral streams to wildlife in the desert is undisputed; it is well-documented in the literature, the sum of which represents decades of observations and surveys (Levick et al. 2008; Baxter 1988; Kirkpatrick et al. 2007; Kubick & Remsen 1977; Tomoff 1977; Daniels & Boyd 1979, and others). Loss of the habitat function and values of all or a significant portion of all streams across a [utility-scale energy project]

site is a substantial adverse effect on state jurisdictional waters. It conflicts with state LORS, and it is a significant impact.

Ephemeral and intermittent streams in the arid west provide important habitat for wildlife and are responsible for much of the biotic diversity (Levick et al. 2008). They have higher moisture content, and the topographic relief provides shade and cooler temperatures within the channel. In cases where the habitat is distinct in species composition, structure, or density, wash communities provide habitat values not available in the adjacent uplands. They provide movement corridors and seasonal access to water or moisture. Baxter (1988) noted that washes, because of their higher diversity plant communities, are probably important foraging locations for desert tortoise; in smaller washes, there is greater cover and diversity of spring annuals, providing important food sources. Researchers have noted the high diversity of herpetofauna in desert washes and many snakes and lizards preferentially use xeroriparian habitat because of its denser cover (*ibid.*). Kirkpatrick et al. (2007) noted that even dry, ephemeral washes have greater avian abundance and species richness than adjacent uplands. In a study of 66 plots on BLM lands in California, dry washes support 1.5 times more breeding species and twice as many wintering species as the more common desert scrub (Kubick & Remsen 1977; Tomoff 1977; Daniels & Boyd 1979, and others).

[CEC] Staff's observations of the habitat functions and values provided by the washes on the project site, and observations of wildlife use of the features are consistent with the literature. During the state waters delineation field verification and other site visits, biologists from CDFG and [CEC] staff noted the washes offer habitat functions and values distinct from the surrounding upland. For example, anywhere there are concentrations of water, the vegetation is denser and more robust, which in turn provides more shade, escape cover, more seed and other food sources, including more insects, which would in turn support more reptiles, etc. The washes also have greater plant species diversity; for example, germination of rattlesnake weed (*Chamaesyce albomarginata*), a preferred desert tortoise food, was abundant in the lower reaches of many channels, particularly at the terminus of the streams where soils remain saturated longer. Bunchgrasses (*Sporobolus airoides, Pleuraphis rigida*) are more abundant on some features. The terminus of these streams held water longer and thus provided sources of temporary pooling. Staff noted higher mammal density on the streams and their active floodplains, evidenced by greater bioturbation and more abundant coyote scat.

Fish and Game Code Chapter 6, Fish and Wildlife Protection and Conservation, Section 1600 *et seq.* was enacted to provide for the conservation of fish *and* wildlife resources associated with stream ecosystems. The Fish and Game Code further defines fish and wildlife to include: "*...all wild animals, birds, plants, fish, amphibians, invertebrates, reptiles, and related ecological communities, including the habitat upon which they depend for continued viability."* (FGC Division 5, Chapter 1, section 45, and Division 2, Chapter 1, section 711.2(a), respectively)

Ephemeral Streams Not Excluded Under Fish and Game Code

For the purposes of implementing sections 1601 and 1603 of the Fish and Game Code, California Code of Regulations Title 14, section 720, requires submission to CDFG of general plans sufficient to indicate the nature of a project for construction by or on behalf of any person, governmental agency, state or local, and any public utility, of any project which will divert, obstruct or change the natural flow or bed of *any* river, stream or lake

designated by the department, or will use material from the streambeds designated by the department, all rivers, streams, lakes, and streambeds in the State of California, including *all rivers, streams and streambeds which may have intermittent flows of water*, are hereby designated for such purpose. The term "*...intermittent flows...*" has long been interpreted by the courts and the Attorney General's office to include ephemeral flow (Vyverberg pers. comm.).

While Fish and Game Code sections 1600 *et seq.* do not include a definition for "stream", it has been the practice of the Lake and Streambed Alteration Program (LSA) to define a stream as: A body of water that flows perennially, intermittently, or ephemerally. Streams include a channel, banks, bed, and floodplains where present.

Characteristic hydrology indicators, fluvial indicators and other geomorphic features used in [CDFW and CEC] staff's identification of state waters include: channel morphology; inundation or saturation; fresh deposition; ripples; changes in vegetation species composition, structure or density (relative to the adjacent creosote uplands); wrack; mud drapes; changes in sediment texture; sediment sorting; scour or shelving; and gravel ramps. The use of these indicators to delineate desert streams is well-documented in literature and agency guidance (USACE 2005; Lichvar & McColley 2008; Lichvar & Wakely 2004).

[The HHSEGS FSA includes photos of a sampling of the stream features and indicators in the FSA's **Biological Resources Figure 3**.]

All Desert Wash Vegetation Protected Under Fish and Game Code

Fish and wildlife resources are held in trust for the people of the State by and through the California Department of Fish and Game (FGC § 711.7). CDFG is responsible for conserving, protecting, and managing fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of these species (Fish and Game Code Section 1802).

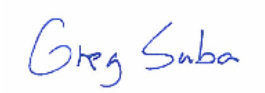
The importance of vegetation along streams to the function and values of the stream habitat is a matter of undisputed fact, supported by the body of scientific literature, and presumed by CDFG (Vyverberg pers. comm.). Fish and Game Code links stream protection with the presence of fish, wildlife, *and their habitat.* Fish and Game Code Chapter 6, Fish and Wildlife Protection and Conservation, Section 1600 *et seq.* was enacted to provide for the conservation of fish *and* wildlife resources associated with stream ecosystems. The Fish and Game Code further defines fish and wildlife to include: "*...all wild animals, birds, plants, fish, amphibians, invertebrates, reptiles, and related ecological communities, including the habitat upon which they depend for continued viability."* (FGC Division 5, Chapter 1, section 45, and Division 2, Chapter 1, section 711.2(a), respectively).

[CEC] staff and CDFG's observations of…washes during numerous site visits…, conducted approximately 7-10 days following a large storm event, and one day following a smaller (0.2 inch) storm event…found an abundance of germination of native annuals in the lower reaches of many washes, including the smallest washes; germination that was not apparent in the adjacent uplands. There were differences in the species composition of the wash vegetation on some (not all) washes; however, the vegetation is typically larger, more robust, and denser along the washes than in the adjacent uplands.

> The regulations do not limit CDFG's protection or conservation authority to one specific type of vegetation community (e.g., woody riparian vegetation but not other wash communities). It has been the practice of the LSA Program to define "riparian" to mean: *areas adjacent to perennial, intermittent, and ephemeral streams, lakes, and estuarine-marine shorelines that are transitional between terrestrial and aquatic ecosystems and that are distinguished by gradients in biophysical conditions, ecological processes, and biota, areas through which surface and subsurface hydrology connect waterbodies with their adjacent uplands. Riparian areas include those portions of terrestrial ecosystems that significantly influence exchanges of energy and matter with aquatic ecosystems (i.e., a zone of influence)* (Vyverberg pers. comm.).

Thank you for considering these recommendations for inclusion into the DRECP. We believe this information can facilitate efforts to develop management measures that can benefit both conservation and development actions under the Plan.

Sincerely,



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